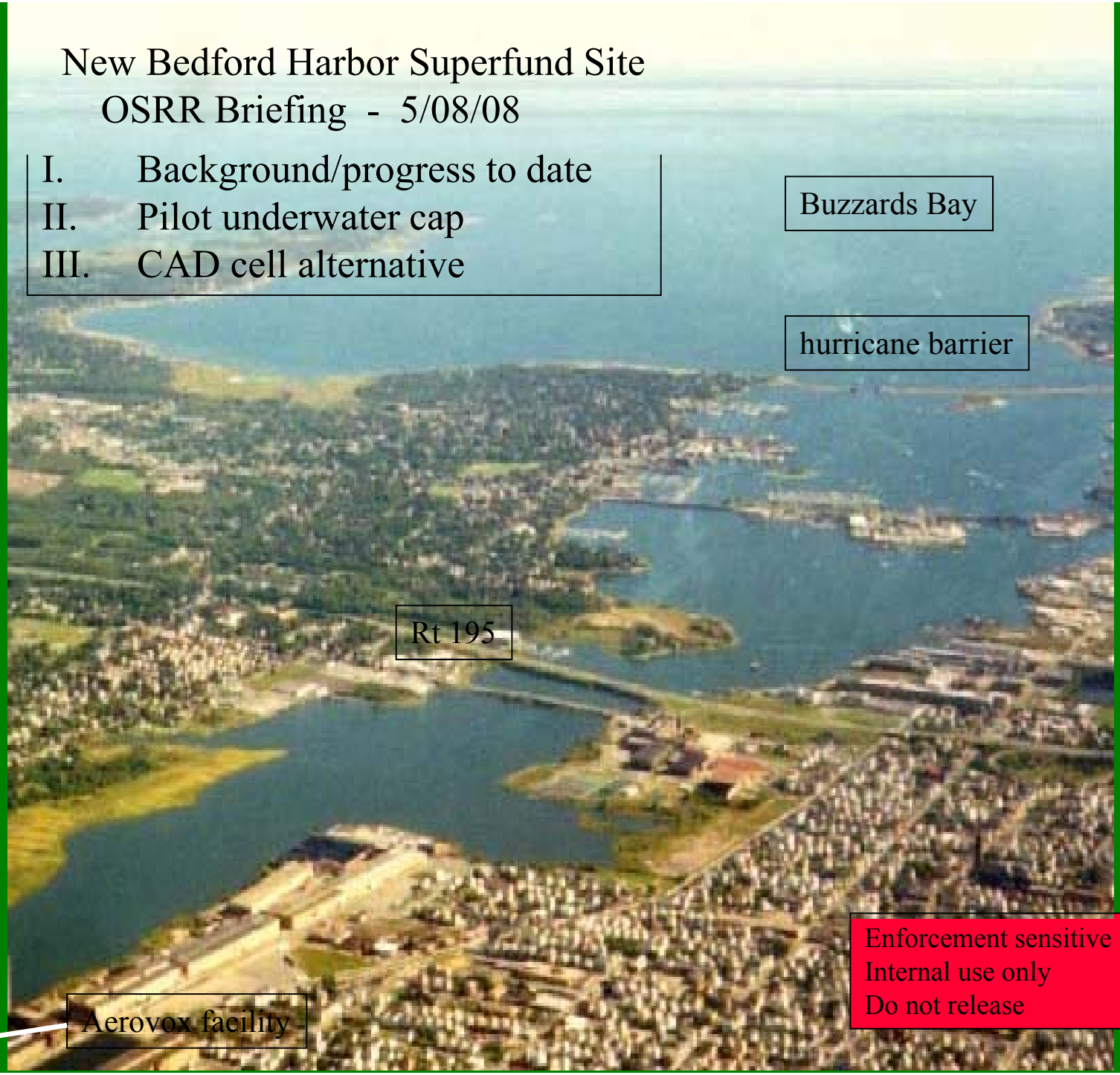
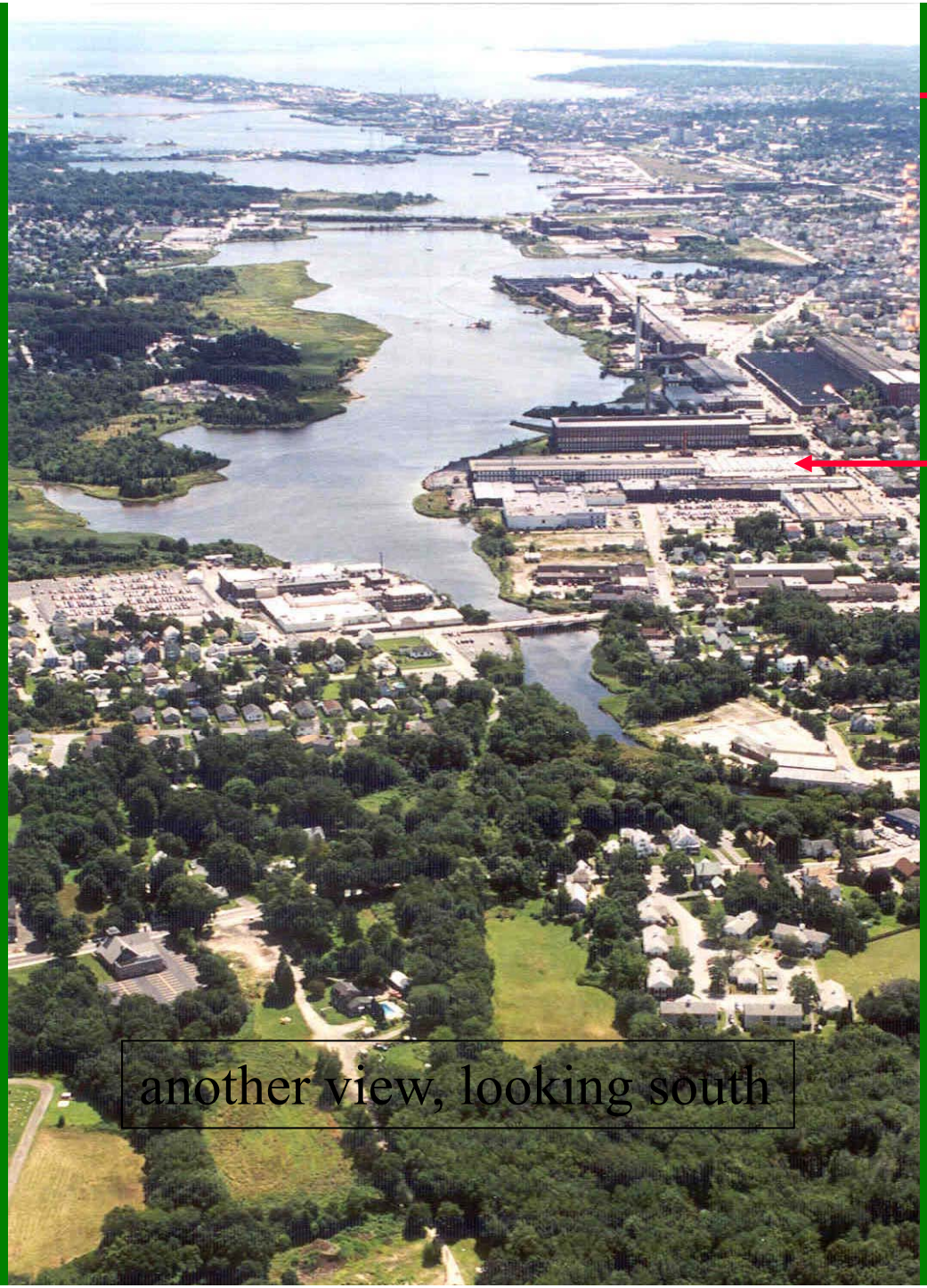
New Bedford Harbor Superfund Site
OSRR Briefing - 5/08/08

I. Background/progress to date
II. Pilot underwater cap
III. CAD cell alternative



Enforcement sensitive
Internal use only
Do not release



another view, looking south

Cornell-Dubilier

Second capacitor facility
in outer harbor

Aerovox

Electronic
capacitor facility
released ~275
tons of PCBs
c.1940 – 1977
(slated for demolition 2008/09)

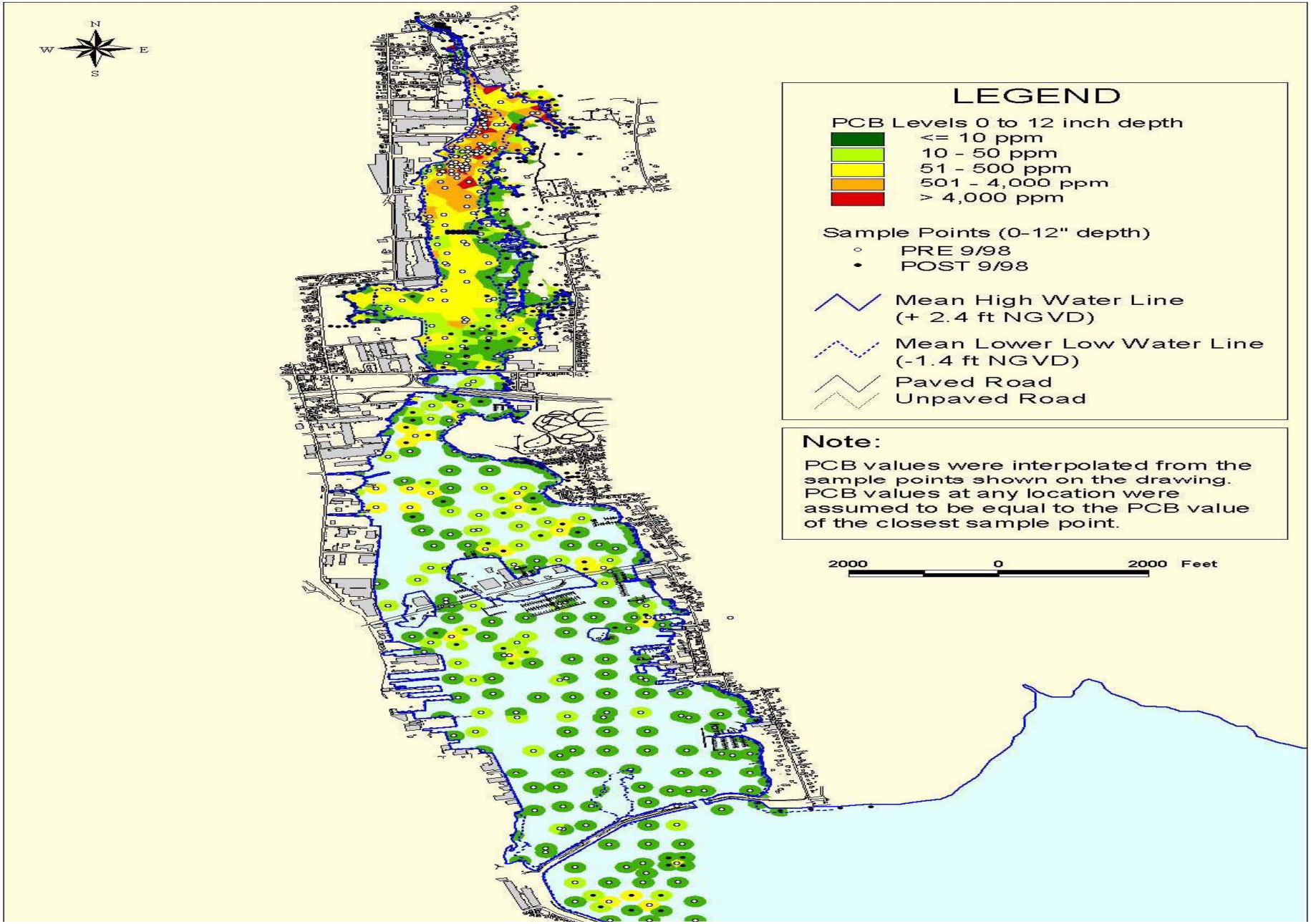

11/10/2003

the lower harbor – largest fishing port in US ($-wise)

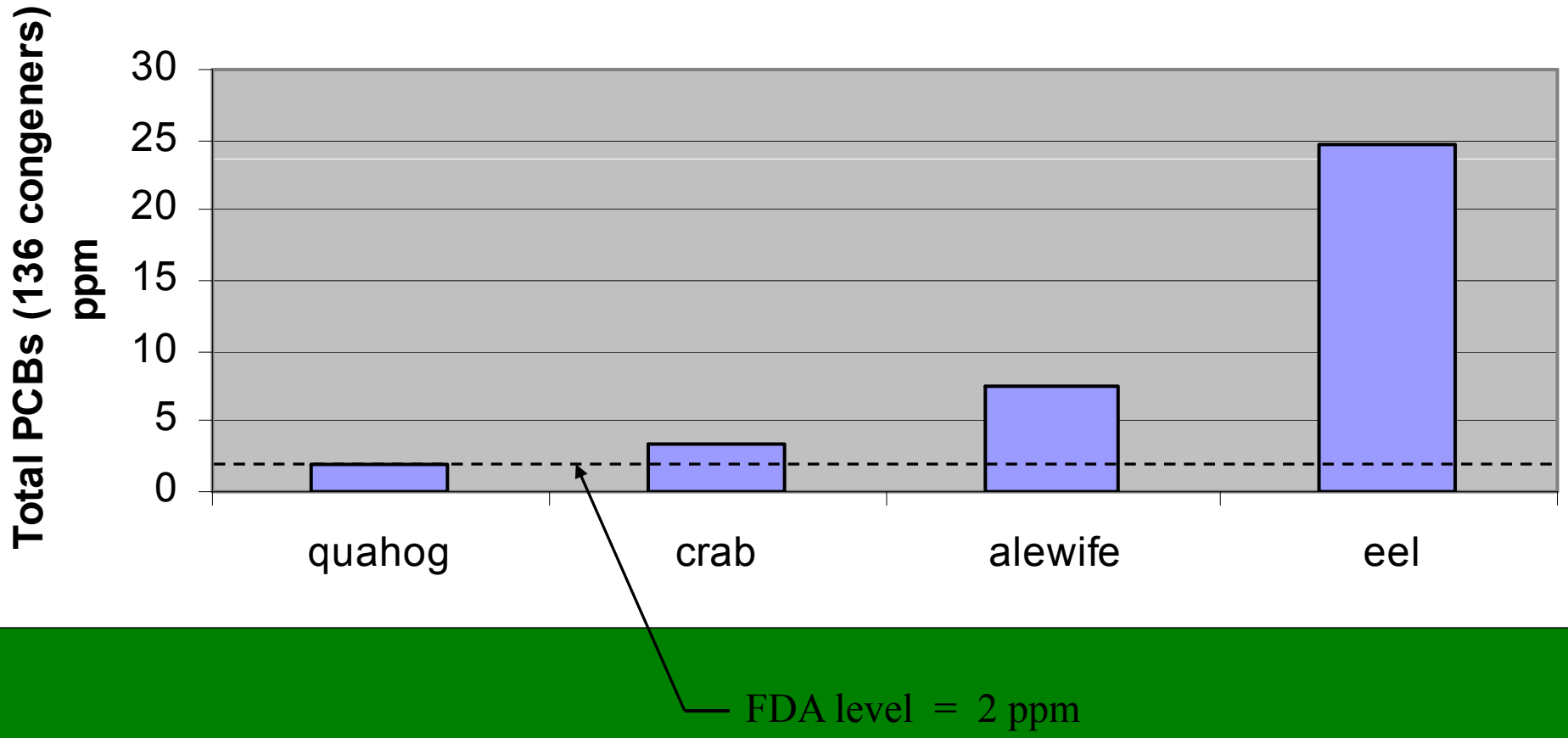
EPA United States Environmental Protection Agency

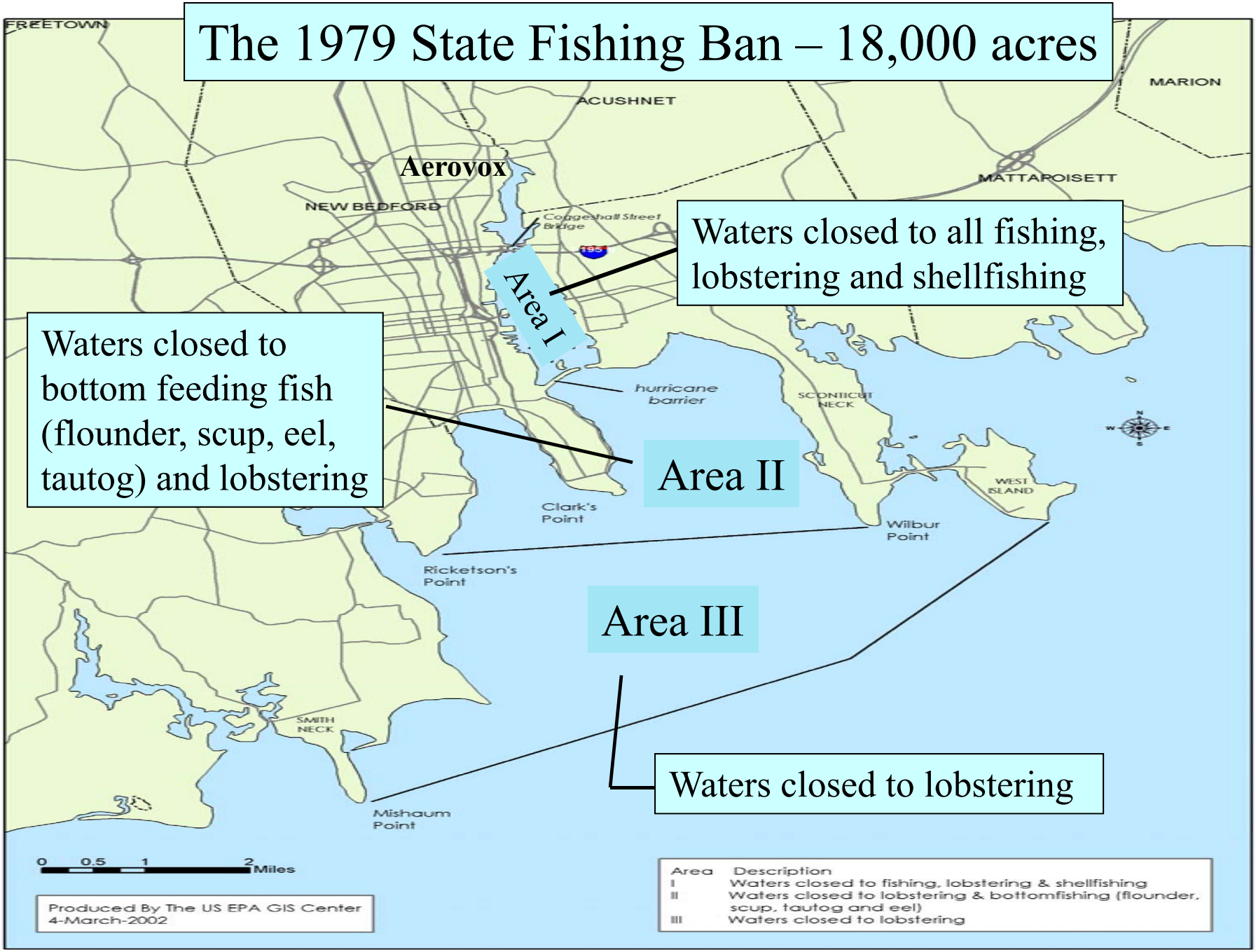
New Bedford Harbor
Inferred PCB Levels - 0 to 12 inch depth
May 2001

US Army Corps of Engineers
New England District



PCBs in NBH Area 1 Seafood
Average values (2005, 2006)




The 1979 State Fishing Ban – 18,000 acres
FREETOWN
ACUSHNET
MARION
Aerovox
MATTAPOISETT
NEW BEDFORD
Coggeshall Street Bridge
195
Area I
Waters closed to all fishing, lobstering and shellfishing
Waters closed to bottom feeding fish (flounder, scup, eel, tautog) and lobstering
hurricane barrier
SCONTICUT NECK
Area II
WEST ISLAND
Clark's Point
Wilbur Point
Ricketson's Point
Area III
SMITH NECK
Waters closed to lobstering
Mishaum Point
0 0.5 1 2 Miles
Produced By The US EPA GIS Center
4-March-2002
Area Description
I Waters closed to fishing, lobstering & shellfishing
II Waters closed to lobstering & bottomfishing (flounder, scup, tautog and eel)
III Waters closed to lobstering

Cleanup Decisions

1990 - Hot Spot ROD. 5 acres (14,000 cy) near Aerovox with PCB levels > 4,000 ppm.

1998 - Upper and Lower Harbor ROD. ~270 acres (880,000 cy)

Sediment cleanup levels (seafood consumption risk):

10 ppm - upper harbor

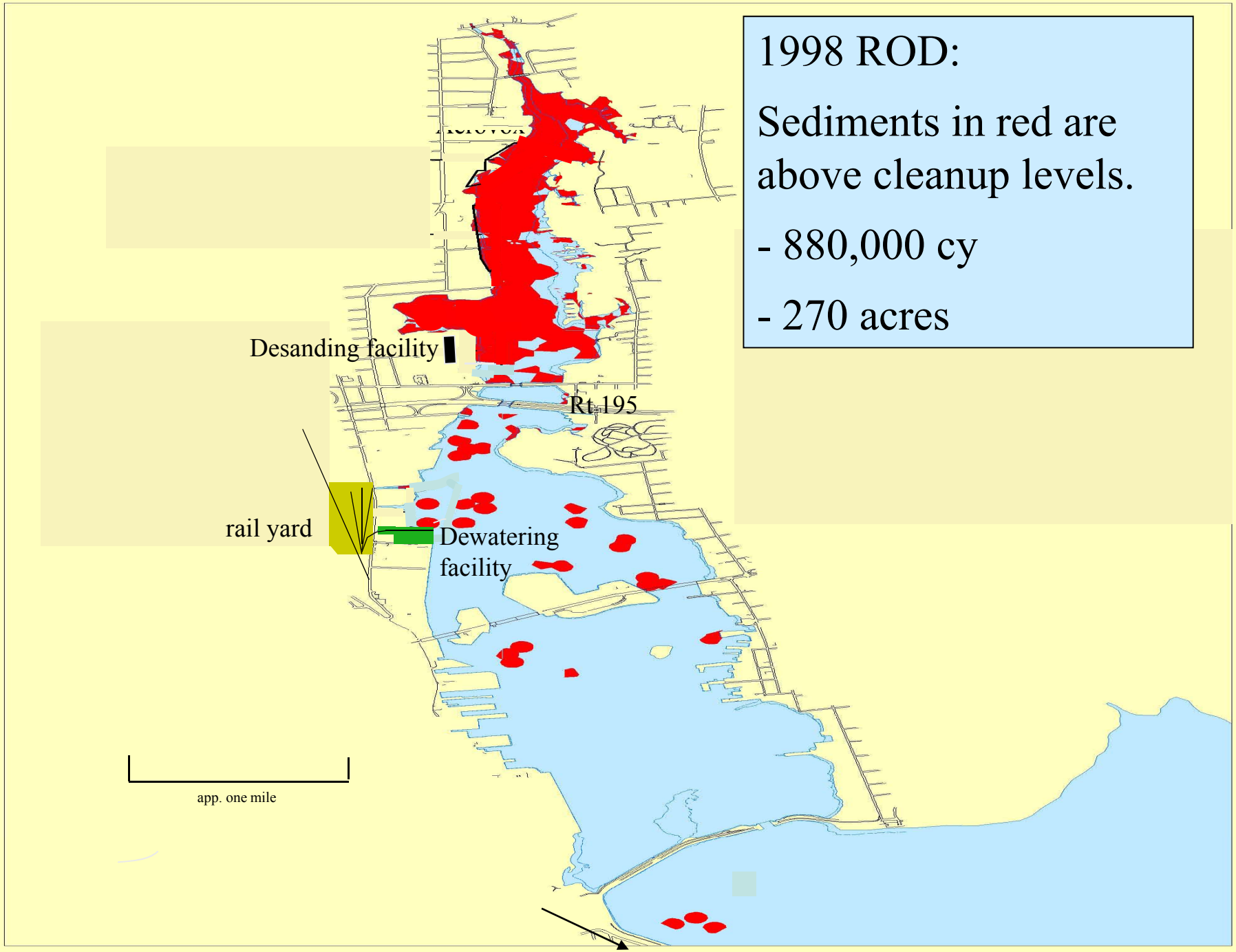
50 ppm - lower harbor

Shoreline soil cleanup levels (dermal contact risk):

1 ppm - residential areas

25 ppm - recreational areas

50 ppm - industrial areas and (remote) wetlands


1998 ROD:
Sediments in red are above cleanup levels.
- 880,000 cy
- 270 acres
Desanding facility
Rt.195
rail yard
Dewatering facility
app. one mile

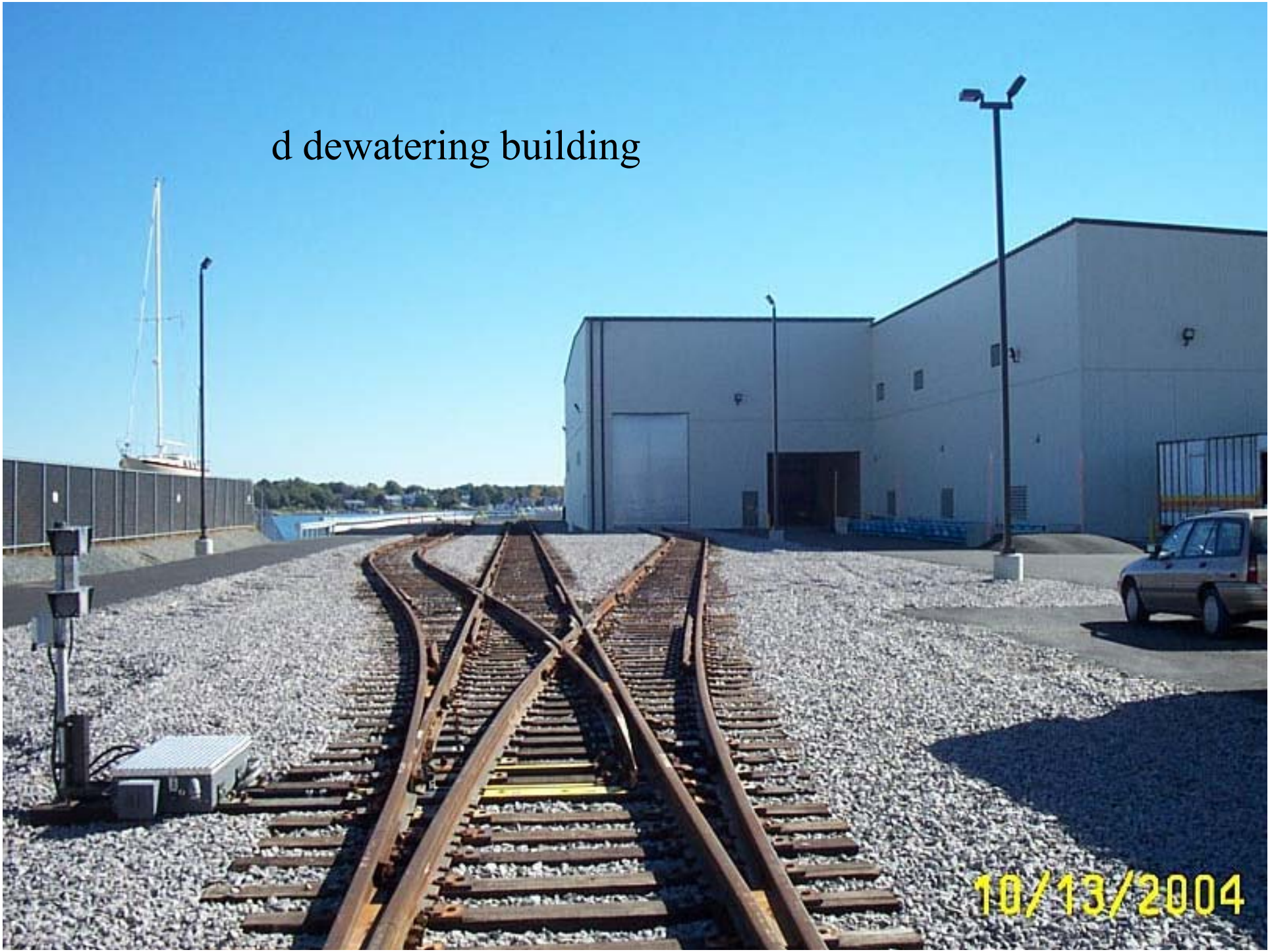
QUICK look at progress to date

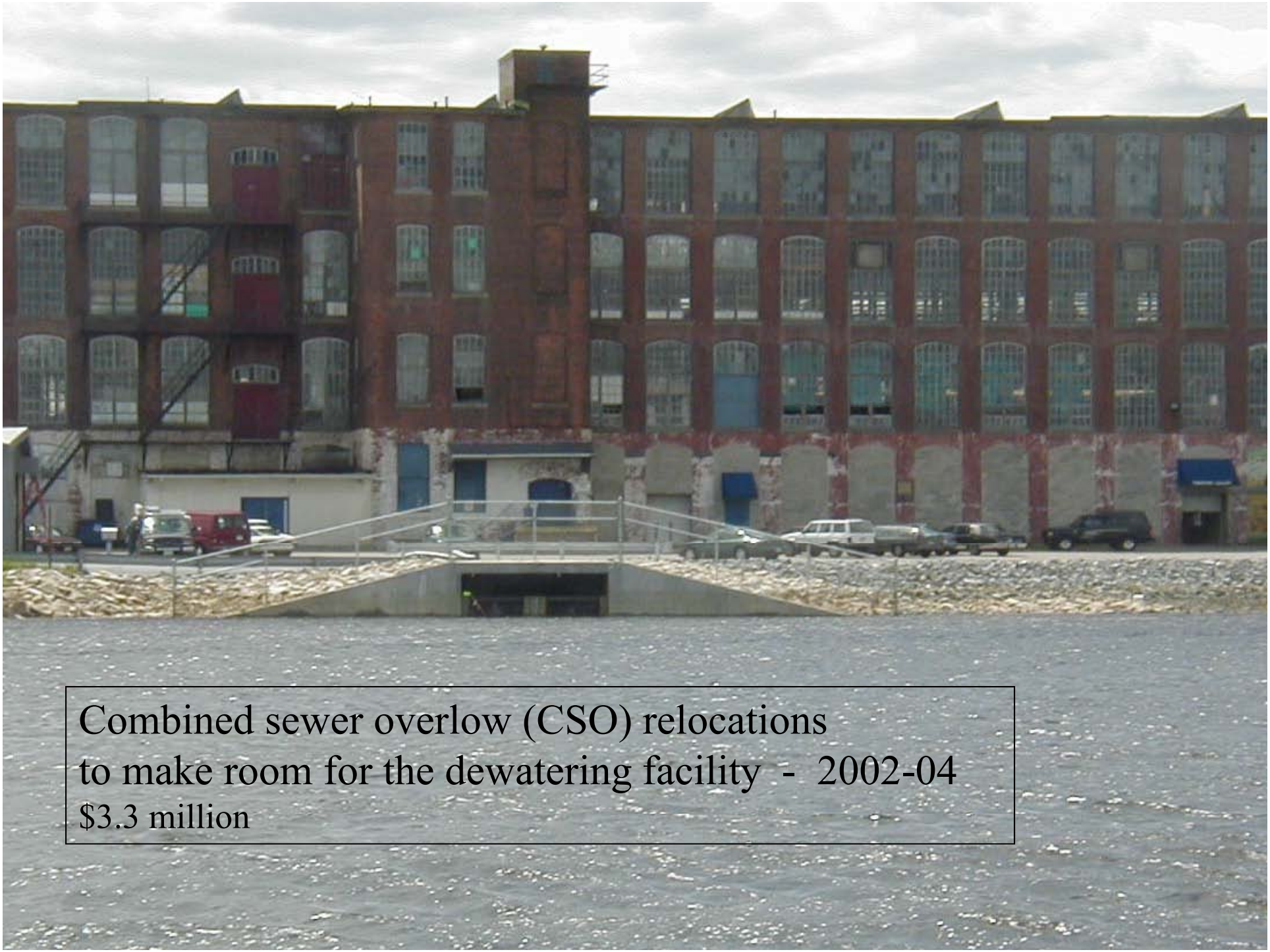
"Early Action" shoreline cleanup – 1999-2000
$0.8 million


NSTAR Power Cable Relocation – 2001
$4.1m (app. $3m more needed in 2008-09)


Dewatering facility bulkhead - 2002/03
$9.9 million

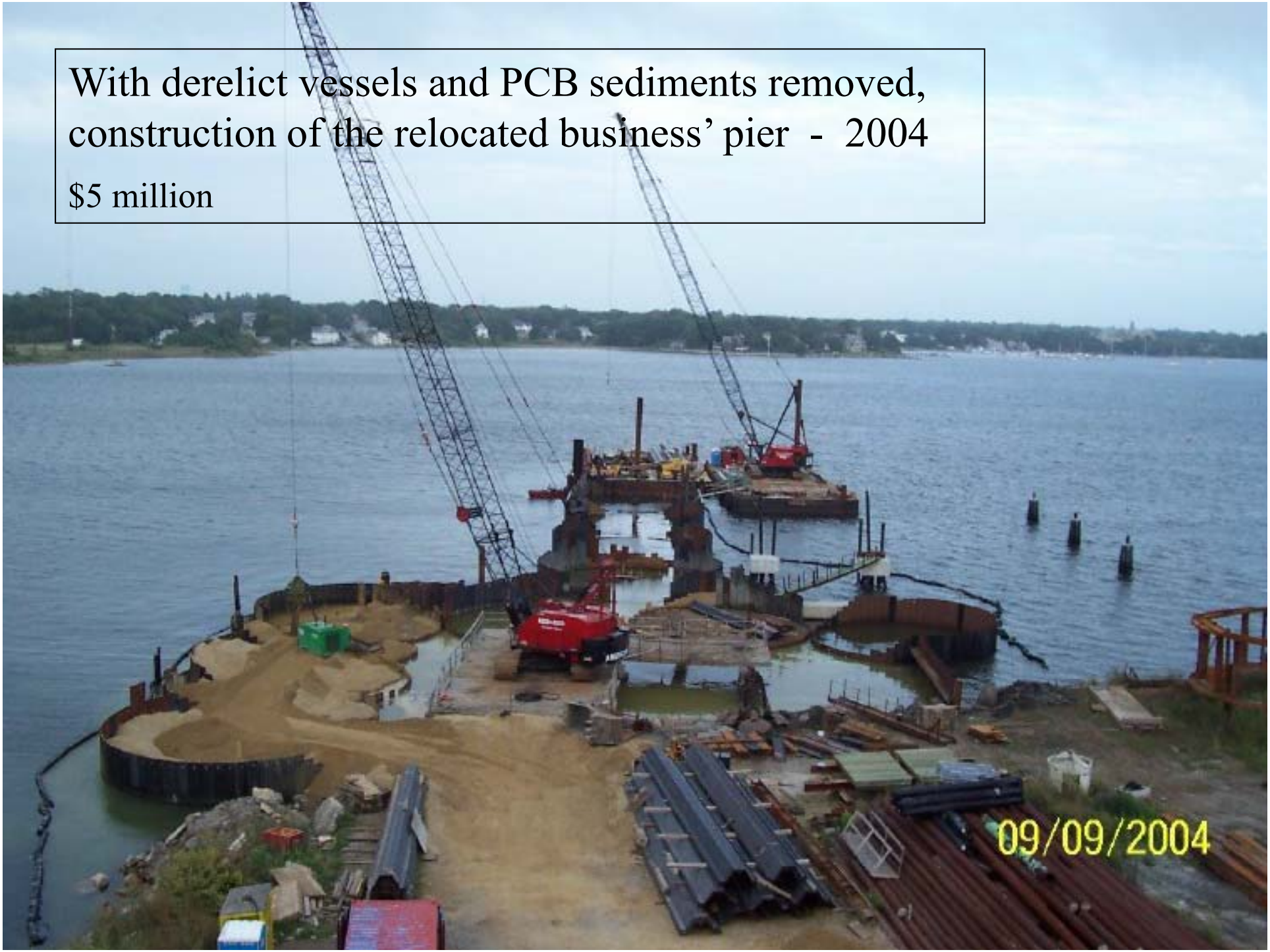

ewatering facility and rail spur - 2002-04
$12.4 million


d dewatering building
10/13/2004

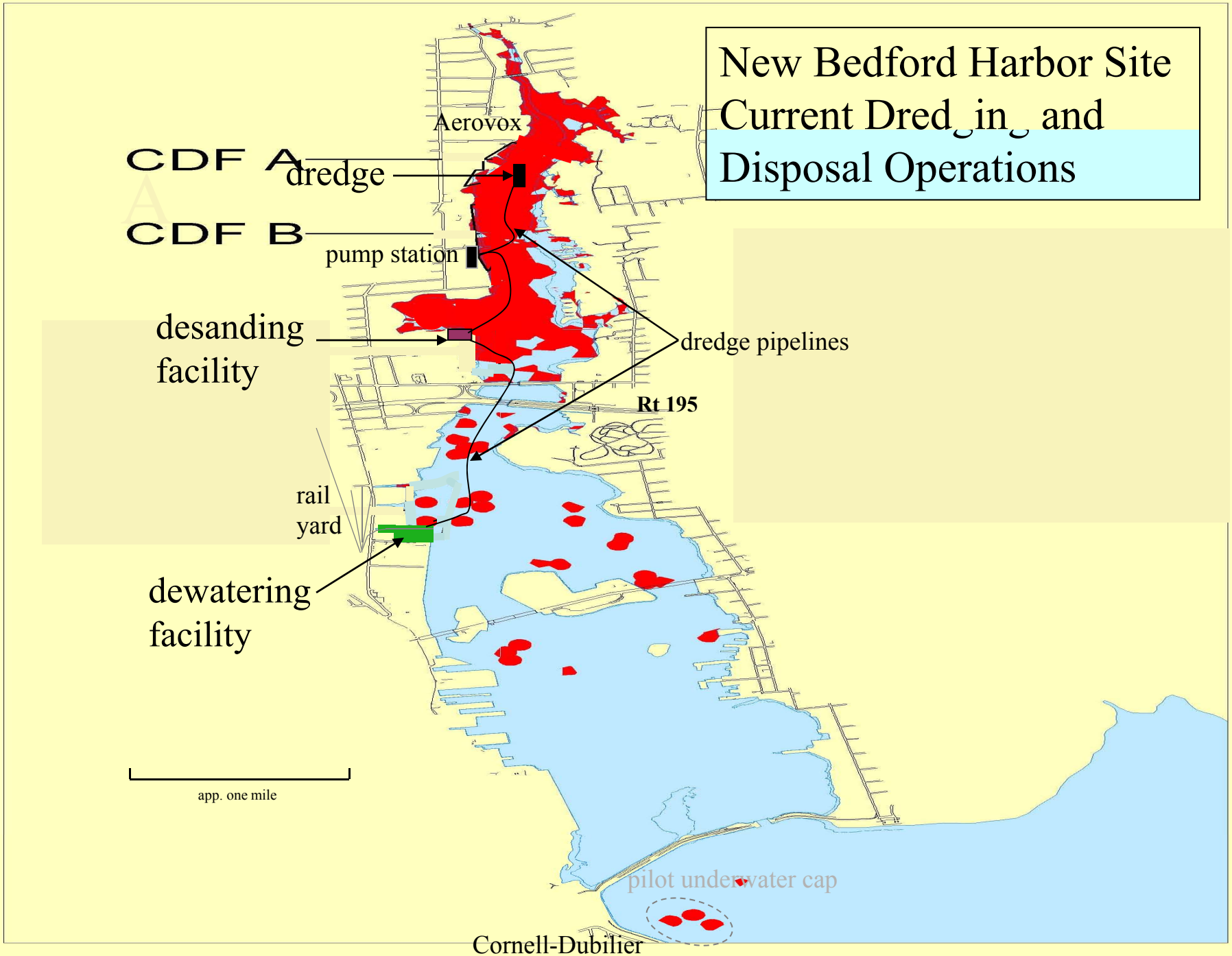


Combined sewer overlow (CSO) relocations
to make room for the dewatering facility - 2002-04
$3.3 million


Demolition and removal of derelict vessels to allow a shoreline business relocation - 2002
$1.3 million
MACK


With derelict vessels and PCB sediments removed,
construction of the relocated business' pier - 2004
$5 million
09/09/2004


"North of Wood Street" cleanup – 2002
$6.3 million


New Bedford Harbor Site
Current Dredging and
Disposal Operations
Aerovox
CDF A
dredge
CDF B
pump station
desanding
facility
dredge pipelines
Rt 195
rail
yard
dewatering
facility
app. one mile
pilot underwater cap
Cornell-Dubilier

Current dredging and disposal operations

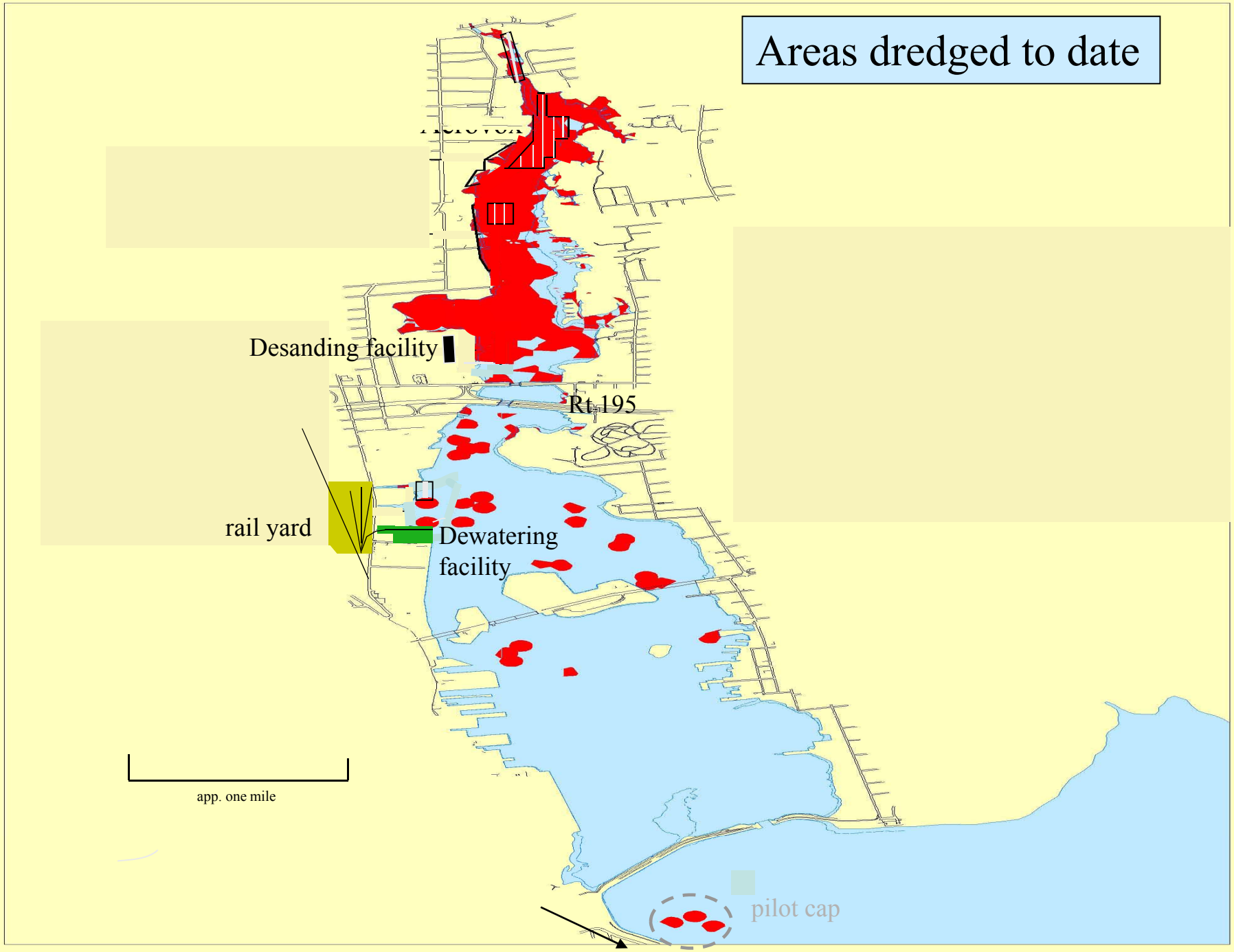
1. Dredging in upper harbor

2. Desanding

3. Dewatering

4. Loading to rail for offsite disposal

Areas dredged to date



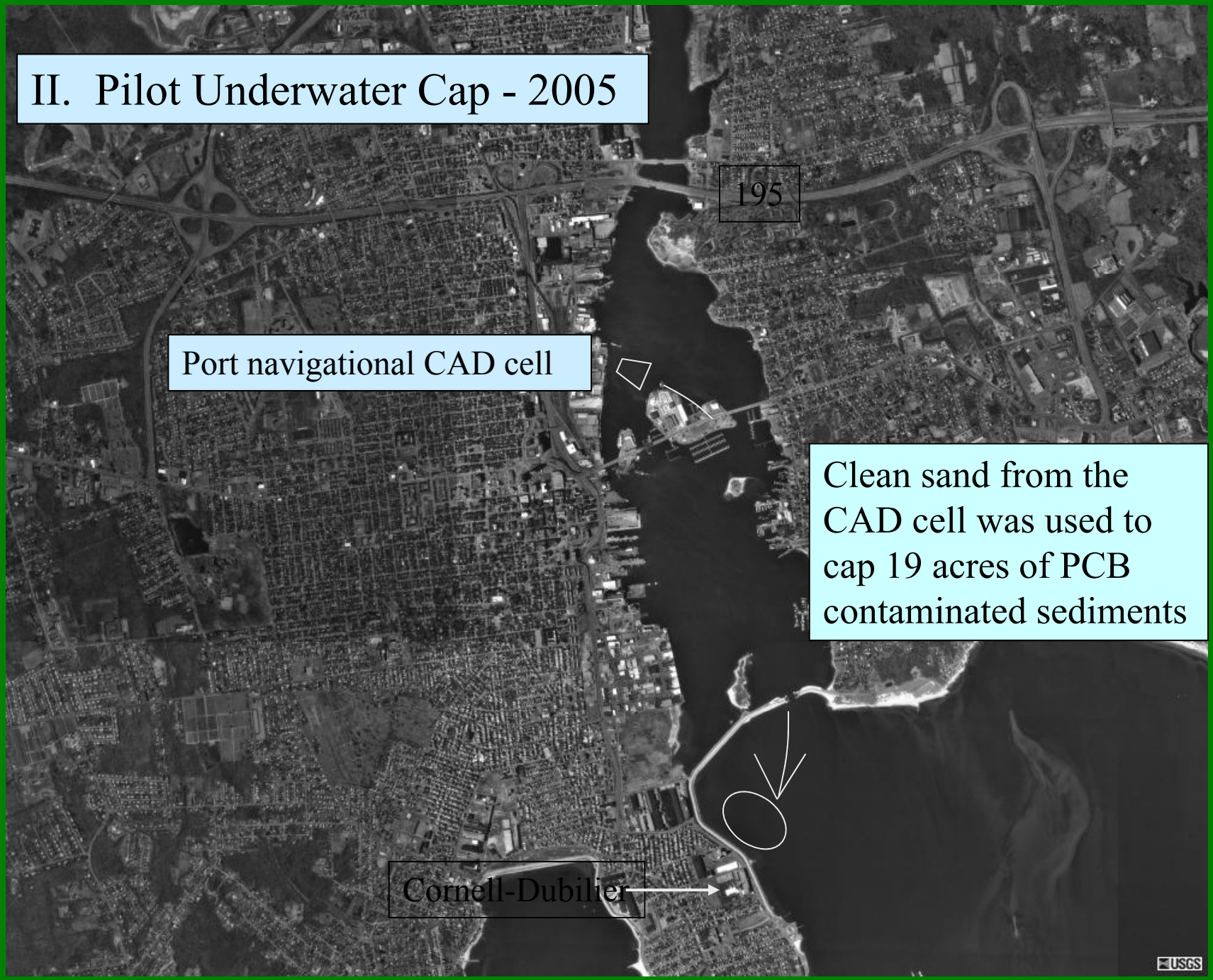
Cost and Schedule Estimate for Current Approach

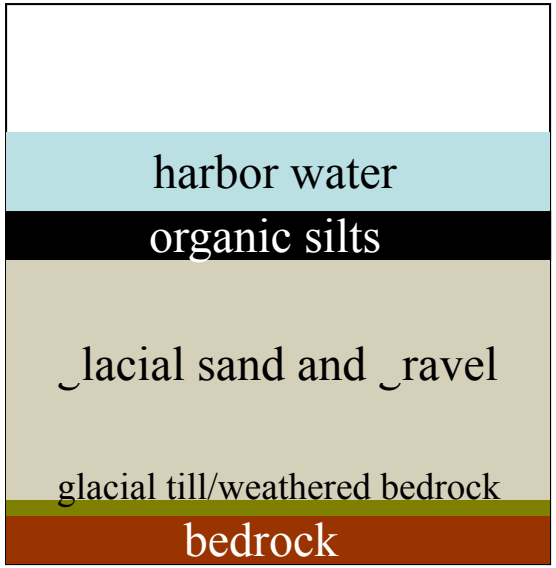
3.5% annual inflation assumed

Annual funding level	Years to complete	Costs to complete
$80 million[1]	4 to 5	$341 million
$30 million	18	$540 million
$15 million[2]	39	$1,113 million

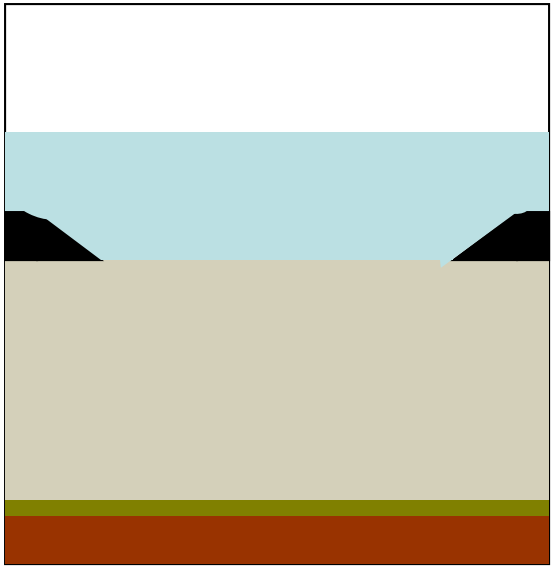
[1]Design funding level

[2]Actual funding level 2004-2008

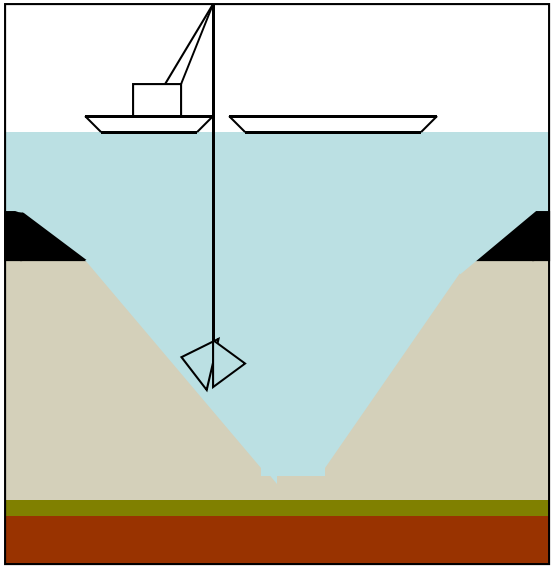

II. Pilot Underwater Cap - 2005
195
Port navigational CAD cell
Clean sand from the CAD cell was used to cap 19 acres of PCB contaminated sediments
Cornell-Dubilier
USGS



1. Harbor bottom as is

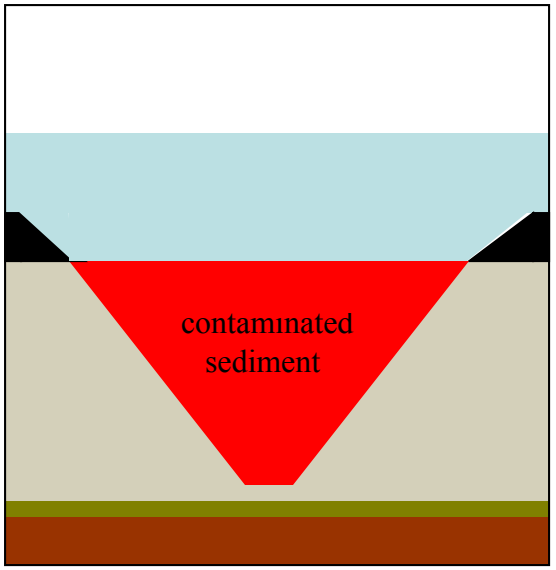


2. Excavation of silts

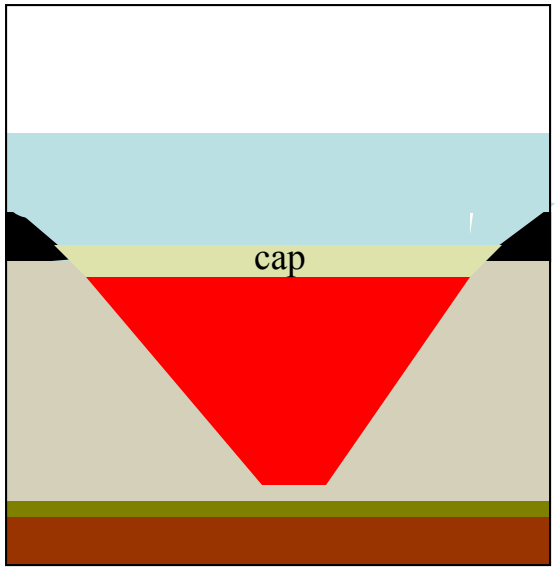


3. Excavation of sand and gravel

What's a CAD cell?

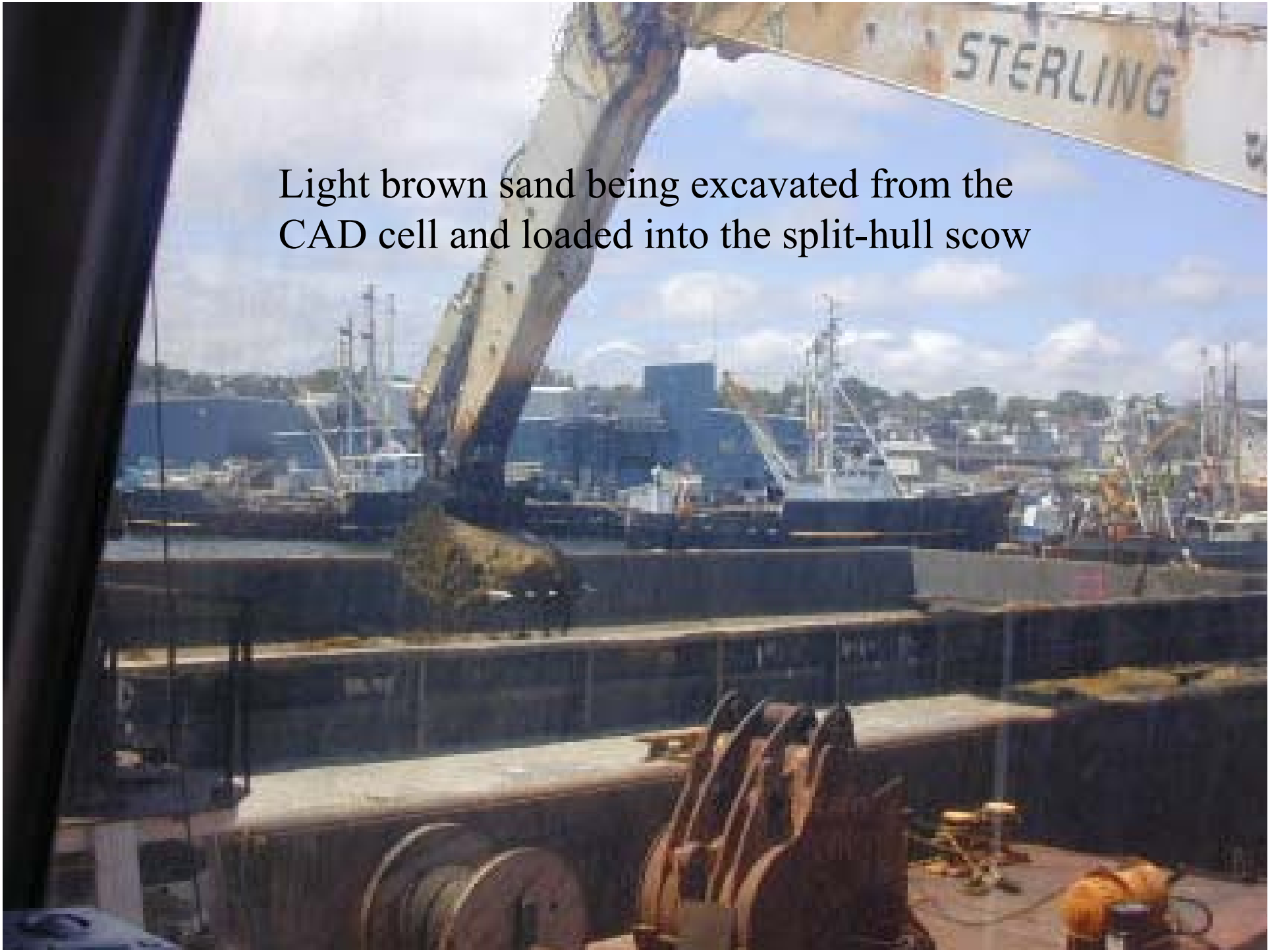


4. Placement of dredged sediments into the CAD cell



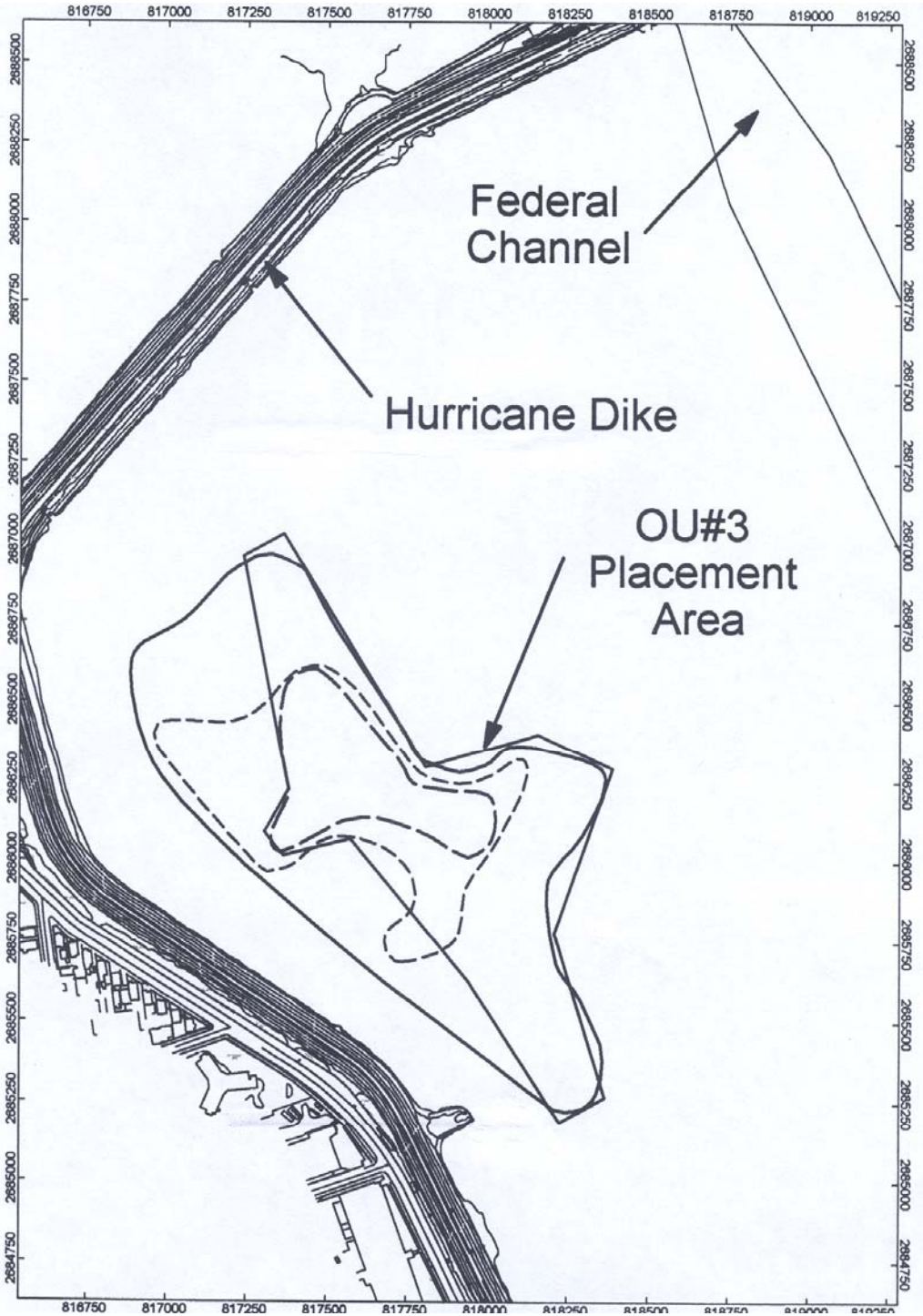
5. Placement of clean cap (after consolidation)


The port’s CAD cell being excavated

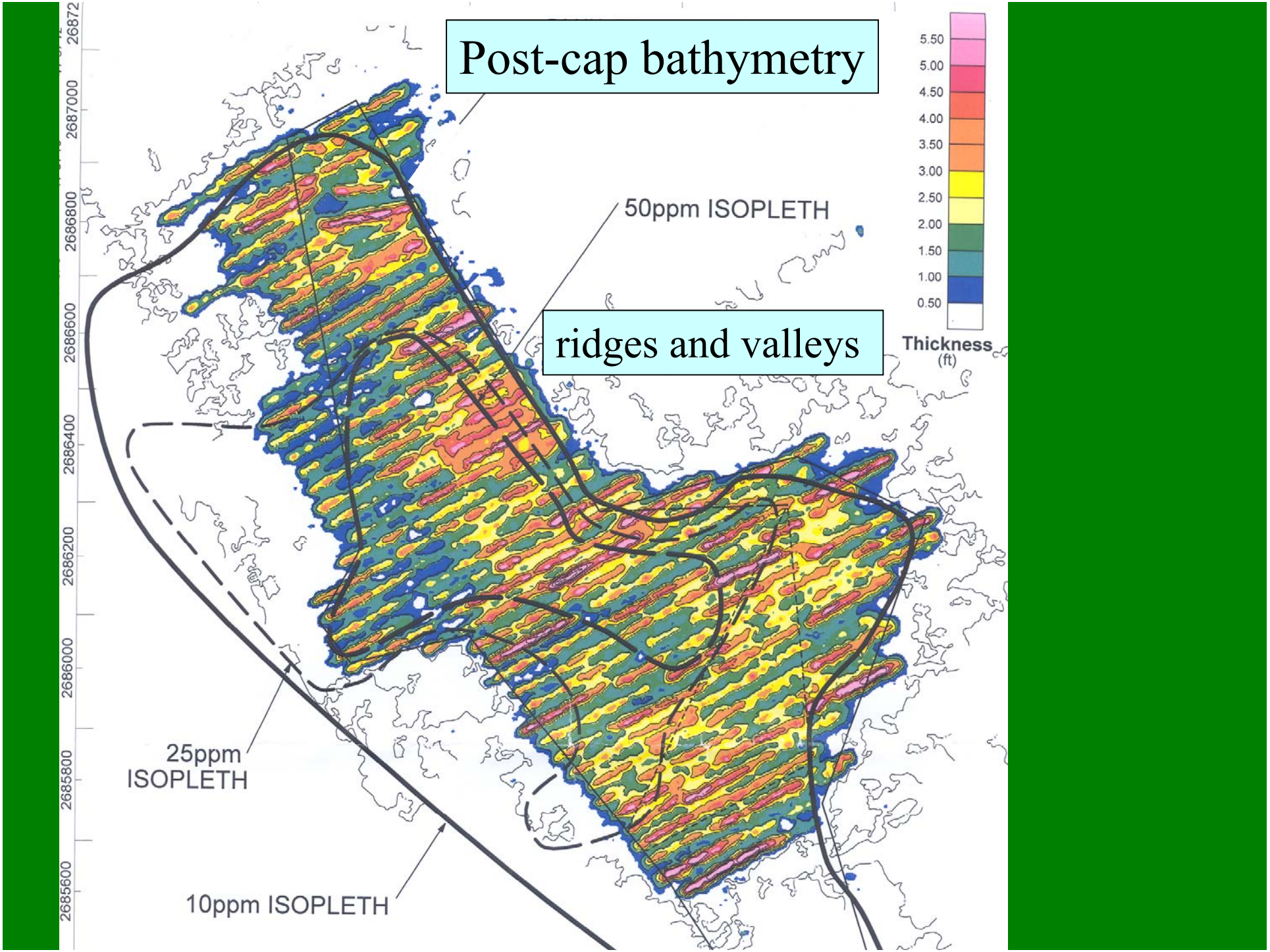


Light brown sand being excavated from the CAD cell and loaded into the split-hull scow

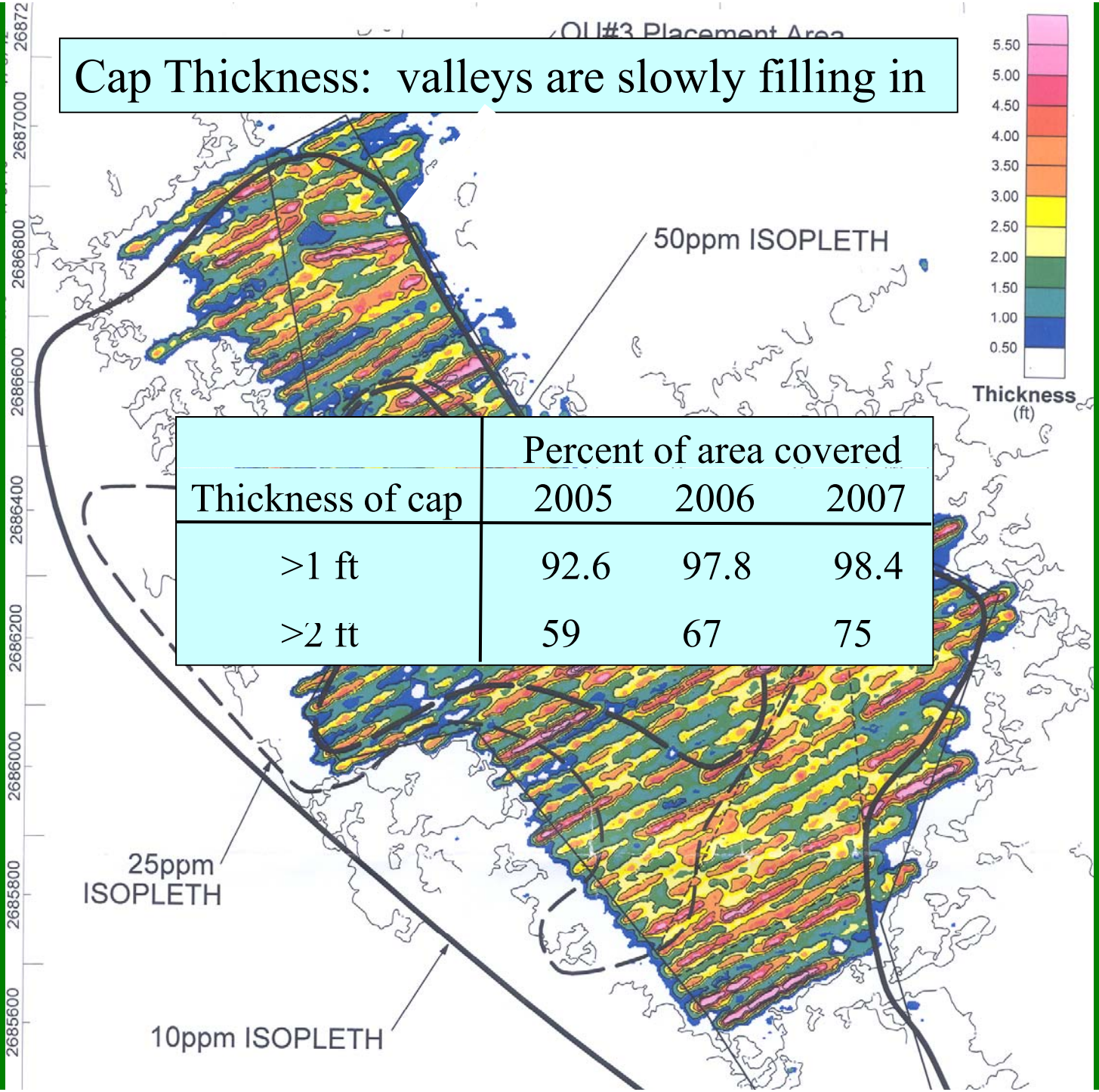

Split-hull scow just starting to open.
07/10/2005 09:33:01



Post-cap monitoring to date

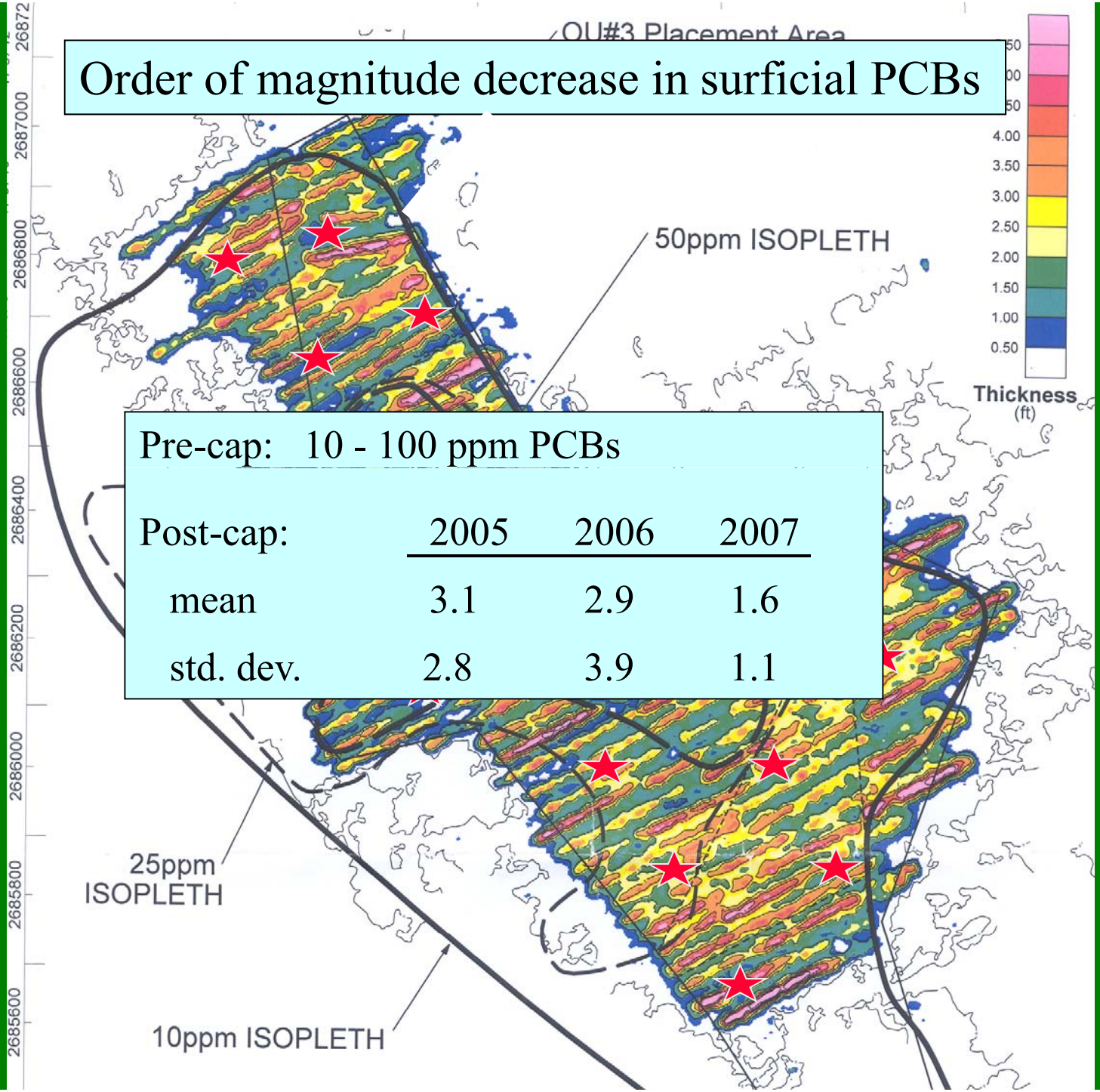

Post-cap bathymetry
50ppm ISOPLETH
ridges and valleys
25ppm
ISOPLETH
10ppm ISOPLETH
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
Thickness
(ft)
2687000
2686800
2686600
2686400
2686200
2686000
2685800
2685600

Cap Thickness: valleys are slowly filling in



Thickness of cap	Percent of area covered 2005	2006	2007
>1 ft	92.6	97.8	98.4
>2 ft	59	67	75

Order of magnitude decrease in surficial PCBs



Pre-cap: 10 - 100 ppm PCBs

Post-cap:	2005	2006	2007
mean	3.1	2.9	1.6
std. dev.	2.8	3.9	1.1

★ = 17 post-cap sediment sampling locations

Biological monitoring:
to be part of ou3 RI/FS (sediment toxicity, bioaccumulation, benthic enumeration)

Shown: sediment profiling camera of pre-cap conditions

REDACTED

CAD cell alternative

Technical evaluation will include:

1. Releases to water column during placement
   (to be minimized by temp. perimeter sheetpile wall)
2. Releases to GW and SW over long term
3. Air quality impacts?
4. Disposal of excavated organic silts
5. Disposal or reuse of excavated sand/gravel
6. Schedule and cost to complete

REDACTED

Initiatives for 2008

1. Demolition of Aerovox building

   - site mob Dec 08?

2. Remediation of Aerovox shoreline

   - % levels of PCBs, VOCs
   - land based excavation
   - cement stabilization
   - May/June 08

3. Finish ou3 underwater cap

   - fall 08 using clean material from port's latest navigational CAD cell

4. More modeling!